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[0017] (Configuration (3)) Like the signal detecting circuit shown in FIG. 17, the pre-format signal superposed on pre-groove is reproduced by receiving the reflected light from the optical information record medium 1 with the photodiode (PD) divided into two parts, and by carrying out photo electric conversion of this. The signal used for reproduction of a pre-format signal is a push pull (Push-pull) signal which is a difference signal of said photodiode (PD), and the signal component (high frequency component) of a pre-pit train is removed by the band pass filter (BPF) prepared in the preceding stage of an FM demodulator. FIG. 3 shows the situation of the signal of the pre-format information reproduced from the pre-groove and pre-pit train which are wobbled in a meandering form (this signal is hereafter called a wobble signal). In the case where there is no pre-pit, that is, when it is pre-groove, the signal becomes the wobble signal (Iw1) shown with the dashed line in FIG. 3, but when a pre-pit train exists, the quantity of light received with a photodiode (PD) becomes less by the effect of the diffraction of pre-pit, and it has the wave form shown with the thin line in FIG. 3. Then, if a band pass filter (BPF) removes the high frequency component of the pre-pit train, it will become the wobble signal (Iw2) shown by the heavy line in FIG. 3, and the magnitude of a wobble signal will fall as compared with the case of only pre-groove. For this reason, it is more difficult to reproduce the superposed pre-format signal in the case of meandering a pre-pit train than in case of meandering the pre-groove. What is necessary is just to enlarge the wobble amplitude (amplitude of a meandering groove) of a pre-pit train compared with pre-groove, in order to solve this problem. The relation between the wobble amplitude (WB) and the magnitude (Iw) of a wobble signal is shown in FIG. 4. According to this relation, if the wobble amplitude WB2 is set as follows:

$WB2=WB1 \times (Iw1/Iw2)$

(WB1 indicates wobble amplitude of pre-groove)

the wobble signal of a pre-pit train can be made the same as the magnitude of pre-groove.

[0018] (Configuration (4)) In an optical information record medium, in order to raise memory capacity, a track pitch is narrowed, and the length of a bit is reduced (linear density being raised). Moreover, as explained in the Problems to be Solved by the Invention, beam-spot size for recording and reproducing is also reduced when enlarging capacity of an optical information record medium. In order to perform recording and reproduction of an optical information record medium stably, the diameter of the beam spot smaller than a track pitch is needed at least. Since it is impossible to perform recoding and reproduction of the optical information record medium by a player whose

beam-spot size is not adjusted to enlarge the capacity (not reduced), in such a player, recognition of the optical information record medium cannot be performed from the pre-format information on the optical information record medium. Then, by partially preparing a field, which a player with large beam-spot size can reproduce, in an optical information record medium whose capacity is enlarged, and by recording the pre-format information including the control information of the optical information record medium in the field, it will become possible for the player, which is not adjusted to a large capacity, to recognize the optical information record medium whose capacity is enlarged. In this invention, the track pitch of a field including this control signal was extended, so that a player having a large beam spot size can perform reproduction. The example of a configuration of a physical format of the optical information record medium of this invention is shown in FIG. 5. As shown in FIG. 5, the track pitch (TP2) of the winding pre-pit train field is larger than the track pitch (TP1) of pre-groove. Moreover, as explained in configuration (3), the wobble amplitude (WB2) of a pre-pit train is also enlarged compared with the wobble amplitude (WB1) of a pre-groove field.

[0019] (Configuration (5)) In said configuration (4), by lowering the density of a pre-pit train field in the direction of a truck (by making track pitch large), it is easy to reproduce the pre-format information on the optical information record medium for a player with large beam-spot size. However, it is possible to have the same effect by lowering the record linear density (density in the circumference direction in the optical information record medium having a disc shape as show in FIG. 1) of the pre-pit train field. The example of a configuration of a physical format of the optical information record medium having lowered the record linear density of a pre-pit train field is shown in FIG. 6. The bit size (BL2) of the minimum pit of the pre-pit train is longer than the bit size (BL1) of the minimum pit recorded on pre-groove, and spacing between pits of the pre-pit train is larger than that of the pits recorded on pre-groove. For this reason, it is easy to perform reproduction even if a beam spot is large. Moreover, as explained in said configuration (3), the wobble amplitude (WB2) of the pre-pit train is also enlarged compared with the wobble amplitude (WB1) of the pre-groove field. A player with large beam-spot size also becomes easy to reproduce the pre-format information on the optical information record medium according to this effectiveness.

[0020] (Configuration (6)) If an optical information record medium has the configuration that the track pitch of the pre-pit train field is enlarged as shown in FIG. 5, and the configuration that the record linear density of the pre-pit train field is lowered as shown in FIG. 6 (in other words, configuration that the configuration (4) and configuration (5) are combined), it become easier to reproduce the pre-format

information and it is clear to obtain high effectiveness. FIG. 7 shows the example of a configuration of a physical format of the optical information record medium having the configuration that a track pitch of the pre-pit train field is enlarged and the record linear density of the pre-pit train field is lowered.

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